

# Oud Vaporisation System – Comprehensive Public

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## 1 • Problem Statement

Traditional **Kōdō** ceremonies deliver unrivalled purity but demand 15-20 min of setup and constant attention. Modern shortcuts—direct-coal burners, electric plates, wax “bakhoor” cubes—*scorch* the chip, generating off-flavours, polycyclic-aromatic hydrocarbons (PAH), and wildly inconsistent temperatures.

**Goal:** create a platform that matches Kōdō purity while offering café-speed startup and lounge-length endurance **without open-flame contact** and without handling loose chips in busy environments.

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## 2 • Solution Overview & Invention Map

### The Five Patented Building Blocks

| # | Name                                         | Core Claim                                                                                                                                  |
|---|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <b>Radial Heat Ring</b>                      | Annular charcoal or quick-light ring surrounding a central aroma plate, delivering 360° IR with $< \pm 10$ °C gradient.                     |
| 2 | <b>Micron-Precision Mica Isolation Plate</b> | Chemically inert, 0.35 mm mica sheet seated on $\leq 1$ mm locator bumps; prevents flame & ash contact.                                     |
| 3 | <b>Depth-Architecture Bowl</b>               | Fixed ledge depths (0.3 / 4 / 6 / 7.5 / 11 / 13.5 mm) mapping to vapor-release profiles from 98 % to 75 %.                                  |
| 4 | <b>Pre-Dosed Mica Cartridge</b>              | A factory-bonded oud chip (or micro-chip array) permanently affixed to the mica plate; fits all bowls and eliminates chip handling on-site. |
| 5 | <b>Modular Stand System</b>                  | Two stands— <i>Table</i> (glazed ceramic) & <i>Travel</i> (CNC-aluminium) —with snap-fit bowls and optional stainless diffuser disk.        |

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| SKU         | Ledge Depth | Central Chimney  | Vapour Release | Default Fuel        | Flagship Use                           |
|-------------|-------------|------------------|----------------|---------------------|----------------------------------------|
| Kōdō        | 0.3 mm      | Ø 20.00 ±0.05 mm | 98 %           | Bamboo spark ring   | Solo meditations & paid tea ceremonies |
| Lounge      | 4 mm        | Ø 21.00 ±0.07 mm | 92 %           | Coconut Table ring  | Boutique lounges & high-end retail     |
| Quick-Light | 6 mm        | Ø 22.00 ±0.07 mm | 90 %           | Standard QL ring    | Coffee shops, massage rooms            |
| Majlis      | 7.5 mm      | Ø 23.00 ±0.10 mm | 87 %           | Standard QL ring    | Arabic majlis & hookah bars            |
| Intense     | 11 mm       | Ø 24.00 ±0.10 mm | 80 %           | Coconut Arabic ring | Outdoor tents, festivals               |
| Niche       | 13.5 mm     | Ø 25.00 ±0.10 mm | 75 %           | Coconut Arabic ring | Perfume labs & demo booths             |

| Name | OD × ID × H | Mas<br>s | Plateau | Burn<br>Time |
|------|-------------|----------|---------|--------------|
|------|-------------|----------|---------|--------------|

|                             |               |      |            |           |
|-----------------------------|---------------|------|------------|-----------|
| <b>QL Cartridge (empty)</b> | 19.8×8 ×10 mm | 6 g  | 210 ±8 °C  | 28-35 min |
| <b>Coconut Gentle</b>       | Ø 30×12 mm    | 14 g | 225 ±10 °C | 38 min    |
| <b>Coconut Table</b>        | Ø 40×15 mm    | 21 g | 230 ±10 °C | 47 min    |
| <b>Coconut Arabic</b>       | Ø 50×18 mm    | 32 g | 235 ±10 °C | 54 min    |

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## 4 • Heat-Transfer Model

| Path                   | Share   | Key Design Rule                                          |
|------------------------|---------|----------------------------------------------------------|
| <b>Radiation</b>       | 60–70 % | 1-2 mm radial gap maximises uniform IR exposure.         |
| <b>Edge Conduction</b> | ≈20 %   | ≤ 1 mm locator contact prevents 300 °C hot-spots.        |
| <b>Convection</b>      | ≈10 %   | Six 2×12 mm slits + central chimney sustain micro-draft. |

Optional **0.5 mm stainless diffuser disk** (Travel stand) caps ignition spike when lighting quick-lights.

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## 5 • Fuel & Cartridge Portfolio

### 5.1 Standard Quick-Light Cartridge (empty)

*Light in tongs → fully ash over 60 s → **insert pre-dosed mica cartridge** → drop ring into bowl.*

### 5.2 Pre-Dosed Mica Cartridge (chip-on-plate)

Factory-bonded wild/farmed oud chip (or graded chip array) adhered to 0.35 mm mica with high-temp inorganic adhesive; fits every bowl; rated  $225 \pm 10$  °C plateau when paired with appropriate ring.

### 5.3 Coconut Ring Series

Pressed at 800 kg/cm<sup>2</sup>; zero binder; 0.8 % ash. Three sizes (Gentle / Table / Arabic) align with Lounge, Intense, and Niche bowls.

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## 6 • Engineering Specifications

- **Materials:** Food-grade anodised 6061-T6 aluminium (Travel), kiln-fired kaolin-based ceramic (Table).
  - **Mica Plate/Cartridge:**  $0.35 \pm 0.03$  mm muscovite, laser-cut Ø 25 mm; chip bonded with silicate cement rated 900 °C.
  - **Locator Dimples:** three hemisph. 0.6 mm deep.
  - **Ash Ribs:** twin 1 mm grooves intercept collapsing ash.
  - **Wall Bevel:** 5° inward to re-wick liquid resin.
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## 7 • Performance & Emissions

| Metric | Result | Method |
|--------|--------|--------|
|--------|--------|--------|

|                           |                                                                             |                                    |
|---------------------------|-----------------------------------------------------------------------------|------------------------------------|
| Plateau Stability         | $\sigma < \pm 10\text{ }^{\circ}\text{C}$ , $\geq 25\text{ min}$ (all SKUs) | K-type TC, Pico log 6000           |
| PAH Reduction             | -32 % vs. open-coal burner                                                  | GC-MS, n = 5                       |
| CO <sub>2</sub> Footprint | -60 % vs. foil + quick-light setup                                          | Cradle-to-gate LCA (Ecoinvent 3.9) |

## 8 • Use-Case Stories

1. **Spa Kōdō Ritual** – 0.3 mm bowl, bamboo spark ring; therapist swaps *pre-dosed mica cartridges* every 12 min without handling loose chips.
2. **Designer Lounge** – 4 mm bowl + Coconut Table ring; lounge attendant inserts pre-dosed cartridge once per 45-min seating.
3. **Coffee-to-Go** – 6 mm bowl, standard QL ring; barista lights ring, inserts pre-dosed cartridge after 1 min; customer enjoys 30 min aromatherapy.
4. **Majlis Gathering** – 7.5 mm bowl, standard QL ring; host offers guests graded Kyara cartridges, swapping every 25 min.
5. **Outdoor Market** – 11 mm bowl, Coconut Arabic ring; vendor demonstrates wild chip cartridges to perfume enthusiasts.

## 9 • Cost-of-Goods & Pricing

| SKU | COGS | Whsle RRP | Gross Margin |
|-----|------|-----------|--------------|
|-----|------|-----------|--------------|

|                                             |        |         |      |
|---------------------------------------------|--------|---------|------|
| Kōdō / Travel                               | \$1.05 | \$9.90  | 89 % |
| Lounge / Table                              | \$1.20 | \$14.90 | 92 % |
| Quick-Light                                 | \$1.25 | \$18.90 | 93 % |
| Majlis                                      | \$1.30 | \$20.99 | 94 % |
| Intense                                     | \$1.40 | \$22.99 | 94 % |
| Niche                                       | \$1.50 | \$24.99 | 94 % |
| <b>Pre-dosed mica cart. (retail 5-pack)</b> | \$0.65 | \$5.00  | 87 % |

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## 10 • IP & Disclosure Plan

- **Archive.org snapshot:** 14 May 2025 (this Rev-I draft).
- **US Provisional filing:** 18 May 2025 (35 U.S.C. §102(a)(1) grace).
- **PCT priority:** 14 May